

REMARKS

In view of the above amendments and the following remarks, reconsideration of the rejections contained in the Office Action of May 28, 2008 is respectfully requested.

By this Amendment, claims 18, 23-25, 27 and 32 have been amended. Thus, claims 18-25, 27-30 and 32-37 are currently pending in the application. No new matter has been added by these amendments.

As indicated above, revisions have been made to the specification. No new matter has been added by the revisions. Entry of the amendments to the specification is thus respectfully requested.

Applicants would like to thank the Examiner for his courtesy in granting and conducting the telephone interview of October 22, 2008. Specific portions of the interview will be referred to in the following discussion.

On pages 2-4 of the Office Action, the Examiner acknowledged the claim for foreign priority under 35 U.S.C. § 119(a)-(d) to Japanese Application No. 2002-182504, but required that the specification be amended to include a reference to the prior Japanese application in order to obtain the benefit of the prior application under 35 U.S.C. § 119(e), 120, 121 or 365(c). While it is maintained that a reference in the specification to a prior foreign application is clearly not required in order for a claim of priority to be valid, as discussed in the response filed on January 28, 2008, it is noted that the specification has been amended to include a reference to the prior foreign application in order to comply with the Examiner's requirement and advance prosecution of the present application. Therefore, it is respectfully submitted that the claim of priority under 35 U.S.C. § 119(a) in the present application satisfies all requirements as identified in MPEP § 1893.03(c).

On pages 4-5 of the Office Action, the Examiner rejected claims 18-20, 22 and 24 under 35 U.S.C. § 102(b) as being anticipated by JP 02-100791. Further, on pages 5-6 of the Office Action, the Examiner rejected claims 18-20, 22 and 24 under 35 U.S.C. § 102(b) as being anticipated by Graham (US 5,200,679). For the reasons discussed below, it is respectfully submitted that the amended claims are clearly patentable over the prior art of record.

Amended independent claim 18 recites a multi-joint drive mechanism comprising *a flat-plate bone-member layer member in which a plurality of flat plate bone members are arranged*

in arrays, with each of the flat plate bone members having at least one recessed portion, the plurality of bone members being movably coupled at coupling portions, and the coupling portions comprising flat plates. Further, the multi-joint drive mechanism of claim 18 includes elastic members which are arranged so as to stretch over the coupling portions on at least one of a contact-surface side of the bone-member layer member that is to make contact with an object and a noncontact-surface side of the bone-member layer member opposed to the contact-surface side, with *the elastic members being fitted into the recessed portions of adjacent ones of the bone members so as to be fixed to the adjacent ones of the bone members*, and the elastic members being capable of being elastically expanded and contracted. In addition, claim 18 recites that the multi-joint drive mechanism is operable to drive flexural motions with the coupling portions between adjoining bone members serving as joints by expanding or contracting the elastic members, and that the multi-joint drive mechanism has a layer structure in which at least the flat-plate bone-member layer member and the elastic members are arranged in a planar fashion.

On page 4 of the Office Action, the Examiner indicates that the JP 02-100791 reference discloses a multi-joint drive mechanism which includes members 11 and 12 connected by coupling portions 16 and 25, as shown in Figs. 3 and 5. In this regard, it was previously argued that the JP 02-100791 reference does not disclose “flat-plate shaped coupling portions,” as was previously recited in independent claim 18, because Fig. 1 clearly shows that coupling members 16 are cylindrical. However, on page 6 of the Office Action, the Examiner indicates that the phrase “flat-plate shaped” is very broad, and asserted that cylindrical members can have “flat-plate shaped” surfaces.

In this regard, it is noted that amended independent claim 18 recites a flat-plate bone-member layer member in which a plurality of *flat plate bone members* are arranged in arrays, with each of the flat plate bone members having at least one recessed portion, the plurality of bone members being movably coupled at coupling portions, and *the coupling portions comprising flat plates*. The JP 02-100791 reference does not disclose a plurality of flat plate bone members arranged in arrays and being movably coupled at coupling portions, with the coupling portions comprising flat plates because, as indicated above, the JP 02-100791 reference discloses that the members 11, 12, 16 and 25 are all cylinders.

Further, during the telephone interview, it is noted that the Examiner acknowledged this

distinction and agreed that amended independent claim 18 is distinguishable over the JP 02-100791 reference. Accordingly, it is respectfully submitted that independent claim 18 is not anticipated by the JP 02-100791 reference.

Graham discloses an artificial hand which, as shown in Fig. 1, includes fingers 12, 13 and 14, each of which includes U-shaped channels 17, 18 and 19 which serve as a proximal phalanx, a medial phalanx and a distal phalanx, respectively. Adjacent channels are connected to each other by pins 22, 23, and the movement of the sections of the fingers is controlled through the operation of cables 47 and 48 which are connected to reels 45 and 46, respectively.

However, Graham does not disclose the “elastic members” as defined by independent claim 18. In this regard, it is first noted that during the telephone interview, the Examiner indicated that the applied prior art does not disclose a multi-joint drive mechanism in which the elastic members are arranged within recessed portions of the bone members, as described on page 20 of the original specification. As indicated above, it is noted that amended independent claim 18 recites *elastic members being fitted into recessed portions of adjacent ones of the bone members so as to be fixed to the adjacent ones of the bone members*.

Graham does not disclose *elastic members being fitted into recessed portions of adjacent ones of the bone members so as to be fixed to the adjacent ones of the bone members*, and a multi-joint drive mechanism operable to drive flexural motions with the coupling portions by expanding or contracting the elastic members, as required by independent claim 18. In this regard, it is noted that on page 5 of the Office Action, the Examiner indicates that either the cables 47 and 48 or the webs 1-3 of Graham can be interpreted to correspond to the elastic members of the present invention.

However, it is noted that Graham’s disclosure of the cables 47 and 48 does not anticipate the elastic members of the present invention, because Graham does not disclose that the cables 47 and 48 are fitted into recessed portions of adjacent ones of the bone members, or that the cables 47 and 48 are fixed to the adjacent ones of the bone members, as required by independent claim 18.

Further, it is noted that Graham’s disclosure of the webs 1-3 does not anticipate the elastic members of the present invention, because Graham does not disclose that the webs 1-3 are fitted into recessed portions of adjacent ones of the bone members, and because Graham does

not disclose a multi-joint drive mechanism operable to drive flexural motions with the coupling portions by expanding or contracting the webs 1-3, as required by independent claim 18. Rather, Graham only discloses that the webs 1-3 extend between opposite side walls and form the object-gripping surface of the finger 14, and Graham does not disclose that flexural motions are driven by expanding or contracting the webs 1-3.

Therefore, neither Graham's disclosure of the cables 47 and 48 nor Graham's disclosure of the webs 1-3 discloses elastic members being fitted into recessed portions of adjacent ones of the bone members so as to be fixed to the adjacent ones of the bone members, and a multi-joint drive mechanism operable to drive flexural motions with the coupling portions by expanding or contracting the elastic members, as required by independent claim 18. Accordingly, it is respectfully submitted that independent claim 18 is not anticipated by Graham.

Therefore, it is respectfully submitted that independent claim 18 is clearly allowable over the prior art of record. Further, it is noted that amended independent claims 27 and 32 include all of the limitations of amended independent claim 18, and should therefore also be considered to be patentable for at least the same reasons discussed above.

Therefore, it is respectfully submitted that independent claims 18, 27 and 32, as well as claims 19-25, 28-30 and 33-37 which depend therefrom, are clearly allowable over the prior art of record.

In view of the foregoing amendments and remarks, it is respectfully submitted that the present application is clearly in condition for allowance. An early notice to that effect is respectfully solicited.

If, after reviewing this Amendment, the Examiner feels there are any issues remaining which must be resolved before the application can be passed to issue, the Examiner is respectfully requested to contact the undersigned by telephone in order to resolve such issues.

Respectfully submitted,

Kazuo YOKOYAMA et al.

*/Walter C. Pledger/
2008.10.28 15:03:08 -04'00'*
By: _____
Walter C. Pledger
Registration No. 55,540
Attorney for Applicants

WCP/lkd
Washington, D.C. 20006-1021
Telephone (202) 721-8200
Facsimile (202) 721-8250
October 28, 2008